

WHAT IS CLAIMED IS:

- 1 1. A storage disk device driver architecture comprising:
2 a RAID class driver having a physical device object representing a RAID
3 system comprised of a plurality of disks, each disk associated with a functional device object
4 adapted to interface with a physical device object representing the disk and providing a
5 RAID-specific device identification.
- 1 2. The storage disk device driver architecture of claim 1, wherein the
2 physical device object providing a RAID-specific device identification is included in a disk
3 controller driver adapted to interface with a disk controller.
- 1 3. The storage disk device driver architecture of claim 1, wherein the
2 physical device object representing the RAID system is adapted to provide a standard disk
3 device identification to an operating system.
- 1 4. The storage disk device driver architecture of claim 1, wherein the
2 RAID class driver is adapted to combine each disk into a RAID system.
- 1 5. The storage disk device driver architecture of claim 4, wherein in
2 response to receiving a request to write a data block to RAID system, the RAID class driver
3 is adapted to mirror the data block on at least a portion of the plurality of disks via the
4 associated functional device objects.
- 1 6. The storage disk device driver architecture of claim 4, wherein in
2 response to receiving a request to write a first and second data block to RAID system, the
3 RAID class driver is adapted to write via the associated functional device objects the first
4 data block to a first portion of the plurality of disks and to write via the associated functional
5 device objects the second data block to a second portion of the plurality of disks.
- 1 7. The storage disk device driver architecture of claim 4, wherein in
2 response to receiving a request to write a first and second data block to RAID system, the
3 RAID class driver is adapted to write via the associated functional device objects an error
4 correction block to a portion of the plurality of disks.

1 8. The storage disk device driver architecture of claim 1, wherein the
2 physical device object representing a RAID system is a child of a RAID controller functional
3 device object adapted to interface with a RAID controller physical device object.

1 9. The storage disk device driver architecture of claim 1, wherein the
2 RAID class driver is adapted to configure the physical device object representing a RAID
3 system according to RAID configuration data stored in a computer system configuration
4 memory.

1 10. The storage disk device driver architecture of claim 1, wherein a first
2 portion of the plurality of disks is associated with a first disk controller of a first type and a
3 second portion of the plurality of disks is associated with a second disk controller of a second
4 type.

1 11. The storage disk device driver architecture of claim 10, wherein the
2 first type is an EIDE type controller and the second type is a SCSI type controller.

1 12. The storage disk device driver architecture of claim 10, wherein the
2 first type is a serial ATA type controller and the second type is a parallel ATA type
3 controller.

1 13. The storage disk device driver architecture of claim 10, wherein the
2 second type is a controller for an external disk.

1 14. The storage disk device driver architecture of claim 1, wherein the
2 RAID class driver is adapted to optimize data access by combining separate data access
3 operations associated with a disk of the RAID system into a single data access operation.

1 15. An integrated circuit adapted to perform core logic functions of a
2 computer, the integrated circuit comprising:
3 a RAID controller adapted to induce an operating system to load a RAID class
4 driver having a physical device object representing a RAID system comprised of a plurality
5 disks;
6 a first disk controller adapted to interface with at least a portion of the plurality
7 of disks and further adapted to induce the operating system to load a disk controller driver,

8 wherein the disk controller driver is adapted to provide RAID-specific device identifications
9 for the portion of the plurality of disks.

1 16. The integrated circuit of claim 15, wherein the physical device object
2 representing the RAID system is adapted to provide a standard disk device identification to
3 an operating system.

1 17. The integrated circuit of claim 15, wherein in response to receiving a
2 request to write a data block to the RAID system, the integrated circuit is adapted to mirror
3 the data block on at least a portion of the plurality of disks.

1 18. The integrated circuit of claim 15, wherein in response to receiving a
2 request to write a first and second data block to the RAID system, the integrated circuit is
3 adapted to write the first data block to a first subset of the portion of the plurality of disks and
4 to write the second data block to a second subset of the portion of the plurality of disks.

1 19. The integrated circuit of claim 15, wherein in response to receiving a
2 request to write a first and second data block to the RAID system, the integrated circuit is
3 adapted to write an error correction block to at least a subset of the portion of the plurality of
4 disks.

1 20. The integrated circuit of claim 19, wherein the integrated circuit is
2 adapted to determine the value of an error correction block from the first and second data
3 block.

1 21. The integrated circuit of claim 15, wherein the integrated circuit is
2 adapted to configure the physical device object representing a RAID system according to
3 RAID configuration data stored in a computer system configuration memory.

1 22. The integrated circuit of claim 15, further adapted to interface with a
2 second disk controller, wherein the second disk controller adapted to interface with at least a
3 second portion of the plurality of disks and further adapted to induce the operating system to
4 load a second disk controller driver, wherein the second disk controller driver is adapted to
5 provide RAID-specific device identifications for the second portion of the plurality of disks.

1 23. The integrated circuit of claim 15, further including a second disk
2 controller adapted to interface with at least a second portion of the plurality of disks and

3 further adapted to induce the operating system to load a second disk controller driver,
4 wherein the second disk controller driver is adapted to provide RAID-specific device
5 identifications for the second portion of the plurality of disks.

1 24. The integrated circuit of claim 23, wherein the first disk controller is of
2 a first type and the second disk controller is of a second type.

1 25. The integrated circuit of claim 24, wherein the first type is an EIDE
2 type controller and the second type is a SCSI type controller.

1 26. The integrated circuit of claim 24, wherein the first type is a serial
2 ATA type controller and the second type is a parallel ATA type controller.

1 27. The integrated circuit of claim 24, wherein the second type is a
2 controller for an external disk.